

District I  
1625 N. French Dr., Hobbs, NM 88240  
District II  
1301 W. Grand Avenue, Artesia, NM 88210  
District III  
1000 Rio Brazos Road, Aztec, NM 87410  
District IV  
1220 S. St. Francis Dr., Santa Fe, NM 87505

State of New Mexico  
Energy Minerals and Natural Resources

Oil Conservation Division  
1220 South St. Francis Dr.  
Santa Fe, NM 87505

Form C-141  
Revised August 8, 2011

Submit 1 Copy to appropriate District Office to  
accordance with 19.15.29 NMAC.

**Release Notification and Corrective Action**

**OPERATOR**

☐ Initial Report ☒ Final Report

Name of Company <b>Burlington Resources, a Wholly Owned Subsidiary of ConocoPhillips Company</b>	Contact <b>Lisa Hunter</b>	
Address <b>3401 East 30<sup>th</sup> St, Farmington, NM</b>	Telephone No. <b>(505) 258-1607</b>	
Facility Name: <b>San Juan 28-6 Unit 78</b>	Facility Type: <b>Gas Well</b>	
Surface Owner <b>BLM</b>	Mineral Owner <b>NMSF-079363</b>	API No. <b>3003907204</b>

**LOCATION OF RELEASE**

Unit Letter <b>A</b>	Section <b>01</b>	Township <b>27N</b>	Range <b>06W</b>	Feet from the <b>990</b>	North/South Line <b>North</b>	Feet from the <b>800</b>	East/West Line <b>East</b>	County <b>Rio Arriba</b>
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Latitude **36.60790** Longitude **-107.41182**

**NATURE OF RELEASE**

Type of Release <b>Condensate &amp; Produced Water</b>	Volume of Release <b>81.77bbls/9.2 bbls Prod. Water</b>	Volume Recovered <b>0 bbls</b>
Source of Release <b>Oil Production Tank</b>	Date and Hour of Occurrence <b>Unknown</b>	Date and Hour of Discovery <b>03/16/2016 @ 11:15 a.m.</b>
Was Immediate Notice Given? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <input type="checkbox"/> Not Required	If YES, To Whom? <b>Cory Smith (OCD)</b> <b>Katherina Deimer (BLM)</b> <b>OIL CONS. DIV DIST. 3</b>	
By Whom? <b>Lisa Hunter</b>	Date and Hour <b>03/16/2016 @ 2:19 pm</b>	
Was a Watercourse Reached? <input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	If YES, Volume Impacting the Watercourse. <b>N/A</b> <b>AUG 11 2016</b>	

If a Watercourse was Impacted, Describe Fully.\*  
**N/A**

Describe Cause of Problem and Remedial Action Taken.\*

**During a routine tank gauging it was discovered that the Oil Production Tank released approximately 81.77 bbls Condensate and 9.2 bbls of Produced Water into the ground (suspected corrosion in tank bottom). No staining or fluid was visible on the surface, and no fluid was recovered. The release was contained below surface presumably within the berm, and did not leave location**

Describe Area Affected and Cleanup Action Taken.\*

**Excavation was 36' x 42' x 7-9' Deep in the main excavation and 18.5 x 25' x 5-6' in the BGT area. Approximately 450 c/yds of soil was transported to Envirotech Land Farm. Analytical results were below the regulatory standards – no further action required. The soil sampling report is attached for review.**

I hereby certify that the information given above is true and complete to the best of my knowledge and understand that pursuant to NMOCD rules and regulations all operators are required to report and/or file certain release notifications and perform corrective actions for releases which may endanger public health or the environment. The acceptance of a C-141 report by the NMOCD marked as "Final Report" does not relieve the operator of liability should their operations have failed to adequately investigate and remediate contamination that pose a threat to ground water, surface water, human health or the environment. In addition, NMOCD acceptance of a C-141 report does not relieve the operator of responsibility for compliance with any other federal, state, or local laws and/or regulations.

Signature: 	<b>OIL CONSERVATION DIVISION</b>	
Printed Name: <b>Lisa M. Hunter</b>	Approved by Environmental Specialist: 	
Title: <b>Field Environmental Specialist</b>	Approval Date: <b>12/9/2016</b>	Expiration Date:
E-mail Address: <b>Lisa.Hunter@cop.com</b>	Conditions of Approval:	Attached <input type="checkbox"/>
Date: <b>August 9, 2016</b> Phone: <b>(505) 258-1607</b>	<b>NVF1608232977</b>	

\* Attach Additional Sheets If Necessary

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## **San Juan 28-6 #78 Release Report**

Unit Letter A, Section 1, Township 27 North, Range 6 West  
Rio Arriba County, New Mexico

August 3, 2016

Prepared for:  
ConocoPhillips  
5525 Highway 64  
Farmington, New Mexico 87401

Prepared by:  
Rule Engineering, LLC  
501 Airport Drive, Suite 205  
Farmington, New Mexico 87401

# **ConocoPhillips**

## **San Juan 28-6 #78 Release Report**

Prepared for:

ConocoPhillips  
5525 Highway 64  
Farmington, New Mexico 87401

Prepared by:

Rule Engineering, LLC  
501 Airport Drive, Suite 205  
Farmington, New Mexico 87401



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Heather M. Woods, P.G., Area Manager

Reviewed by:



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**Russell Knight, PG, Principal Hydrogeologist**

August 3, 2016



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## 1.0 Introduction

The ConocoPhillips San Juan 28-6 #78 release site is located in Unit Letter A, Section 1, Township 27 North, Range 6 West, in Rio Arriba County, New Mexico. The release of an estimated 91 barrels (bbls) of condensate/produced water, discovered on March 16, 2016, was the result of corrosion of the above grade tank bottom.

A topographic map of the location reproduced from the United States Geological Society quadrangle map of the area is included as Figure 1 and an aerial site map is included as Figure 2.

## 2.0 Release Summary

<b>Site Name</b>	San Juan 28-6 #78		
<b>Site Location Description</b>	Unit Letter A, Section 1, Township 27 North, Range 6 West		
<b>Wellhead GPS Location</b>	N36.60768 and W107.41170	<b>Release GPS Location</b>	N36.60790 and W107.41182
<b>Land Jurisdiction</b>	Bureau of Land Management (BLM)	<b>Discovery Date</b>	March 16, 2016
<b>Release Source</b>	Above Grade Tank	<b>Substance(s) Released</b>	Condensate/Produced Water
<b>Volume Released</b>	Estimated 91 bbls	<b>Volume Recovered</b>	0 bbls
<b>NMOCD Site Rank</b>	10		
<b>Distance to Nearest Surface Water</b>	Unnamed, ephemeral wash located approximately 240 feet to the northwest which drains to Munoz Canyon		
<b>Estimated Depth to Groundwater</b>	Approximately 100 feet below grade surface (bgs)	<b>Distance to Nearest Water Well or Spring</b>	Greater than 1,000 feet

## 3.0 NMOCD Site Ranking

In accordance with the New Mexico Oil Conservation Division (NMOCD) Guidelines for Remediation of Leaks, Spills, and Releases (August 1993), this site was assigned a ranking score of 10 (Table 1).

Depth to groundwater at the site is estimated to be approximately 100 feet bgs based on the reported depth to water on a cathodic well report for this well.

A review was completed of the New Mexico Office of the State Engineer (NMOSE) online New Mexico Water Rights Reporting System (NMWRRS) and no water wells were



identified within a 1,000 foot radius of the location. No water wells were observed within a 1,000 foot radius of the location during a visual inspection.

An unnamed, ephemeral wash traverses the area approximately 240 feet northwest of the release location which drains to Munoz Canyon.

Based on the ranking score of 10, action levels for remediated soils at the site are as follows: 10 milligrams per kilogram (mg/kg) benzene, 50 mg/kg total benzene, toluene, ethylbenzene, and total xylenes (BTEX), and 1,000 mg/kg total petroleum hydrocarbons (TPH) as gasoline range organics (GRO) and diesel range organics (DRO).

## **4.0 Initial Site Assessment**

### **4.1 Field Activities**

On April 7, 2016, Rule Engineering, LLC (Rule) personnel conducted an initial site assessment to delineate the extents of the release which included advancing eight soil borings (SB-1 through SB-8) utilizing a hand auger. Soil borings were advanced to depths ranging from 4.5 to 7 feet bgs where auger refusal was encountered on sandstone. A sample location map showing the boring locations is included as Figure 3.

### **4.2 Soil Sampling**

Rule collected soil samples from the soil borings at selected intervals. The lithology encountered at the site included clayey silty sand underlain by sandstone. A portion of each sample was field screened for volatile organic compounds (VOCs) and selected samples were analyzed for TPH. Field screening for VOC vapors was conducted with a photoionization detector (PID). Prior to field screening, the PID was calibrated with 100 parts per million (ppm) isobutylene gas. Field analysis for TPH was conducted for selected samples per United States Environmental Protection Agency (USEPA) Method 418.1, utilizing a total hydrocarbon analyzer. Prior to field analysis, the machine was calibrated following the manufacturer's procedure which includes calculation of a calibration curve using known concentration standards.

### **4.3 Field Screening Results**

Field screening results for samples collected from soil borings SB-1 and SB-8 indicated VOC concentrations ranging from 0.0 ppm to 3,275 ppm. Field TPH results for samples collected from soil borings SB-1 through SB-8 indicated TPH concentrations ranging from below the reporting limit of 20 mg/kg to greater than 2,500 mg/kg. Field screening results are summarized in Table 2.

## **5.0 Excavation Confirmation Sampling**

### **5.1 Field Activities**

On May 31, 2016, Rule personnel returned to the location to provide excavation guidance and collect confirmation samples from the resultant excavation. Sierra Oilfield Services Inc. provided heavy equipment operation and support.

The maximum extent of the excavation measured approximately 36 feet by 42 feet by 7 to 9 feet deep in the main excavation area and approximately 18.5 feet by 25.5 feet by 5 to 6 feet in depth (1.5 feet below the original depth) in the BGT area. The impacted soils were transported to the Envirotech Landfarm near Bloomfield, New Mexico for disposal/remediation and the excavation was backfilled with clean, imported material. A depiction of the final excavation with sample locations is included on Figure 3.

### **5.2 Soil Sampling**

Rule collected six composite confirmation soil samples (SC-1 and SC-6) from the final excavation for field screening and laboratory analysis. Each confirmation soil sample is a representative composite comprised of five equivalent portions of soil collected from the sampled area.

A portion of each sample was field screened for VOCs and TPH. Field screening for VOC vapors was conducted with a PID. Prior to field screening, the PID was calibrated with 100 ppm isobutylene gas. Field analysis for TPH was conducted for selected samples per USEPA Method 418.1, utilizing a total hydrocarbon analyzer. Prior to field analysis, the machine was calibrated following the manufacturer's procedure which includes calculation of a calibration curve using known concentration standards.

Soil samples collected for laboratory analysis were placed into laboratory supplied glassware, labeled, and maintained on ice until delivery to Hall Environmental Analysis Laboratory in Albuquerque, New Mexico. All samples were analyzed for BTEX per USEPA Method 8021B and TPH (GRO/DRO) per USEPA 8015D.

Field screening and laboratory analytical results are summarized in Table 3. The analytical laboratory reports are included in Appendix A.

### **5.3 Field Screening Results**

Field screening results for soil confirmation samples SC-1 through SC-6 indicated VOC concentrations ranging from 70.6 ppm to 1,238 ppm. The field TPH concentration results for samples SC-1 through SC-6 ranged from 46.3 mg/kg to 419 mg/kg. Field screening results are summarized in Table 3.



## **5.4 Laboratory Analytical Results**

Laboratory analytical results for excavation confirmation samples SC-1 through SC-8 reported benzene concentrations below the laboratory reporting limits, which are below the NMOCD action level of 10 mg/kg. Total BTEX concentrations for samples SC-1 through SC-8 ranged from below the laboratory reporting limits to 0.55 mg/kg, which are below the NMOCD action level of 50 mg/kg. Concentration of TPH (GRO/DRO) for samples SC-1 through SC-8 ranged from below the laboratory reporting limits to 216 mg/kg, which are below the NMOCD action level of 1,000 mg/kg for a site rank of 10.

Laboratory analytical results are summarized in Table 3. The analytical laboratory reports are included in Appendix A.

## **6.0 Conclusions**

The ConocoPhillips San Juan 28-6 #78 release site is located in Unit Letter A, Section 1, Township 27 North, Range 6 West, in Rio Arriba County, New Mexico. The release of an estimated 91 bbls of condensate/produced water, discovered on March 16, 2016, was the result of the failure of corrosion of the above ground tank bottom. Following the excavation of hydrocarbon impacted soils, confirmation samples SC-1 through SC-8 were collected from the resultant excavation which measured at the maximum extent approximately 36 feet by 42 feet by 7 to 9 feet deep in the main excavation area and approximately 18.5 feet by 25.5 feet by 5 to 6 feet in depth (1.5 feet below the original depth) in the BGT area. Laboratory analytical results for confirmation samples SC-1 through SC-8 reported benzene, total BTEX, and total TPH (GRO/DRO) concentrations below the applicable NMOCD action levels for a site rank of 10. The impacted soils were transported to the Envirotech Landfarm for disposal/remediation and the excavation was backfilled with clean, imported material.

Based on laboratory analytical results of the confirmation soil samples, no further work is recommended at this time.

## **7.0 Closure and Limitations**

This report has been prepared for the exclusive use of ConocoPhillips and is subject to the terms, conditions, and limitations stated in Rule's report and Service Agreement with ConocoPhillips. All work has been performed in accordance with generally accepted professional environmental consulting practices. No other warranty is expressed or implied.



## Tables

**Table 1. NMOCD Site Ranking Determination**  
**ConocoPhillips**  
**San Juan 28-6 #78**  
**Rio Arriba County, New Mexico**

Ranking Criteria	Ranking Score	Site-Based Ranking Score	Basis for Determination	Data Sources
Depth to Groundwater				
<50 feet	20	0	Elevation differential information derived from the topographic map of the area and depth to groundwater 100 feet on cathodic protection report.	NMOCD Online database, Santos Peak Quadrangle, Google Earth, and Visual Inspection
50-99 feet	10			
>100 feet	0			
Wellhead Protection Area				
<1,000 feet from a water source, or <200 feet from private domestic water source	20 (Yes)	0	No water source or recorded water wells within 1,000 foot radius of location.	NMOSE NMWRRS, Santos Peak Quadrangle, Google Earth, and Visual Inspection
	0 (No)			
Distance to Surface Water Body				
<200 horizontal feet	20	10	An unnamed, ephemeral wash located approximately 240 feet northwest of release location which drains to the wash in Munoz Canyon.	Santos Peak Quadrangle, Google Earth, and Visual Inspection
200 to 1,000 horizontal feet	10			
>1,000 horizontal feet	0			
Site Based Total Ranking Score		10		



**Table 2. Initial Site Assessment Field Screening Results**  
**ConocoPhillips**  
**San Juan 28-6 #78**  
**Rio Arriba County, New Mexico**

Sample Name	Date	Approximate Sample Depth (ft bgs)	Field VOCs by PID (ppm)	Field TPH by 418.1 (mg/kg)
NMOCD Action Level*			100	1,000
SB-1	4/7/2016	1.5	1,400	--
		2	1,180	--
		4.5	2,650	--
SB-2	4/7/2016	0.5	1,701	--
		2	1,093	--
		4	992	--
		6.25	1,808	>2,500
SB-3	4/7/2016	1	2,796	--
		2	952	--
		3	1,602	--
		7	3,275	>2,500
SB-4	4/7/2016	0.5	3.0	--
		2	2.6	--
SB-5	4/7/2016	2	6.7	--
		3.5	2.2	--
		5	1.9	--
		5.25	1.1	--
SB-6	4/7/2016	0.5	11.0	--
		3	50.0	--
		4	150	--
		4.5	70.0	--
		6	310	--
SB-7	4/7/2016	1	0.7	--
		2	387	--
		3.5	654	<20.0
		6	159	--
SB-8	4/7/2016	1.5	0.0	--
		3	0.0	--
		4.5	1.0	--
		4.75	0.9	--

Notes: All borings were terminated at auger refusal on sandstone.

VOCs - volatile organic compounds

PID - photoionization detector

ft bgs - feet below grade surface

ppm - parts per million

mg/kg - milligrams per kilogram

TPH - total petroleum hydrocarbons

NMOCD - New Mexico Oil Conservation Division

\*Based on the NMOCD *Guidelines for Remediation of Leaks, Spills and Releases (August 1993)*

\*\*Based on a site ranking of 10.

**Table 3. Excavation Confirmation Field Screening and Laboratory Analytical Results**  
**ConocoPhillips**  
**San Juan 27-6 #78**  
**Rio Arriba County, New Mexico**

Sample Name	Date	Approximate Sample Depth (ft bgs)	Field VOCs by PID (ppm)	Field TPH by 418.1 (mg/kg)	Benzene (mg/kg)	Toluene (mg/kg)	Ethylbenzene (mg/kg)	Total Xylenes (mg/kg)	Total BTEX (mg/kg)	TPH as GRO (mg/kg)	TPH as DRO (mg/kg)
<b>NMOCD Action Level*</b>			<b>100</b>	<b>1,000**</b>	<b>10</b>	<b>NE</b>	<b>NE</b>	<b>NE</b>	<b>50</b>	<b>1,000**</b>	
SC-1	5/31/2016	7 to 9	485	55.3	<0.023	<0.047	<0.047	<0.093	<0.210	<4.7	36
SC-2	5/31/2016	6	200	179	<0.024	<0.049	<0.049	0.55	0.55	18	120
SC-3	5/31/2016	0 to 6	460	46.3	<0.025	<0.050	<0.050	<0.099	<0.224	<5.0	14
SC-4	5/31/2016	0 to 7	813	185	<0.024	<0.047	<0.047	<0.095	<0.213	17	22
SC-5	5/31/2016	0 to 9	70.6	54.0	<0.024	<0.048	<0.048	<0.095	<0.215	<4.8	<9.8
SC-6	5/31/2016	5 to 6	1,238	419	<0.018	<0.037	<0.037	0.18	0.18	46	170

Notes: VOCs - volatile organic compounds  
PID - photoionization detector  
ft bgs - feet below grade surface  
ppm - parts per million  
mg/kg - milligrams per kilogram  
NE - not-established  
ND - not detected above laboratory reporting limits  
BTEX - benzene, toluene, ethylbenzene, and xylenes  
TPH - total petroleum hydrocarbons  
GRO - gasoline range organics  
DRO - diesel range organics  
NMOCD - New Mexico Oil Conservation Division  
\*Based on the NMOCD *Guidelines for Remediation of Leaks, Spills and Releases (August 1993)*  
\*\*Based on a site ranking of 10.



## Figures







## Legend

★ San Juan 28-6 #78 Wellhead

□ Berm



Source: Google Earth

**Rule** Engineering, LLC  
Solutions to Regulations for Industry

0 12.5 25 50 Feet  
1 inch = 20 feet



**ConocoPhillips**

A-S01-T27N-R06W  
N36.60768, W107.41170  
Rio Arriba County, NM  
API: 30-039-07204

**Figure 2**  
**Aerial Site Map**  
San Juan 28-6 #78



# Legend



Final Excavation Extents



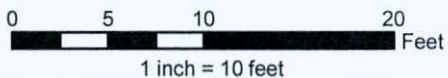
Assessment Soil Boring Locations



Berm



**Rule** Engineering, LLC  
Solutions to Regulations for Industry



**ConocoPhillips**

A-S01-T27N-R06W  
N36.60768, W107.41170  
Rio Arriba County, NM  
API: 30-039-07204

**Figure 3**  
**Sample Location Map**  
San Juan 28-6 #78



## Appendix A

### Analytical Laboratory Reports



Hall Environmental Analysis Laboratory  
4901 Hawkins NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: [www.hallenvironmental.com](http://www.hallenvironmental.com)

June 07, 2016

Heather Woods  
Rule Engineering LLC  
501 Airport Dr., Ste 205  
Farmington, NM 87401  
TEL: (505) 325-1055  
FAX

RE: CoP San Juan 28-6 #78

OrderNo.: 1606014

Dear Heather Woods:

Hall Environmental Analysis Laboratory received 5 sample(s) on 6/1/2016 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to [www.hallenvironmental.com](http://www.hallenvironmental.com) or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

A handwritten signature in black ink, appearing to read "Andy Freeman", is written over a horizontal line.

Andy Freeman  
Laboratory Manager  
4901 Hawkins NE  
Albuquerque, NM 87109

**Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Rule Engineering LLC**Client Sample ID:** SC-1**Project:** CoP San Juan 28-6 #78**Collection Date:** 5/31/2016 10:35:00 AM**Lab ID:** 1606014-001**Matrix:** SOIL**Received Date:** 6/1/2016 7:15:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>JME</b>
Diesel Range Organics (DRO)	36	9.5		mg/Kg	1	6/3/2016 2:56:31 PM	25629
Surr: DNOP	115	70-130		%Rec	1	6/3/2016 2:56:31 PM	25629
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.7		mg/Kg	1	6/3/2016 3:51:44 PM	25622
Surr: BFB	129	80-120	S	%Rec	1	6/3/2016 3:51:44 PM	25622
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	ND	0.023		mg/Kg	1	6/3/2016 3:51:44 PM	25622
Toluene	ND	0.047		mg/Kg	1	6/3/2016 3:51:44 PM	25622
Ethylbenzene	ND	0.047		mg/Kg	1	6/3/2016 3:51:44 PM	25622
Xylenes, Total	ND	0.093		mg/Kg	1	6/3/2016 3:51:44 PM	25622
Surr: 4-Bromofluorobenzene	105	80-120		%Rec	1	6/3/2016 3:51:44 PM	25622

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified



**Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Rule Engineering LLC**Client Sample ID:** SC-2**Project:** CoP San Juan 28-6 #78**Collection Date:** 5/31/2016 10:40:00 AM**Lab ID:** 1606014-002**Matrix:** SOIL**Received Date:** 6/1/2016 7:15:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>JME</b>
Diesel Range Organics (DRO)	120	9.8		mg/Kg	1	6/3/2016 4:02:11 PM	25629
Surr: DNOP	101	70-130		%Rec	1	6/3/2016 4:02:11 PM	25629
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	18	4.9		mg/Kg	1	6/3/2016 5:49:09 PM	25622
Surr: BFB	206	80-120	S	%Rec	1	6/3/2016 5:49:09 PM	25622
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	ND	0.024		mg/Kg	1	6/3/2016 5:49:09 PM	25622
Toluene	ND	0.049		mg/Kg	1	6/3/2016 5:49:09 PM	25622
Ethylbenzene	ND	0.049		mg/Kg	1	6/3/2016 5:49:09 PM	25622
Xylenes, Total	0.55	0.097		mg/Kg	1	6/3/2016 5:49:09 PM	25622
Surr: 4-Bromofluorobenzene	110	80-120		%Rec	1	6/3/2016 5:49:09 PM	25622

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

**Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Rule Engineering LLC**Client Sample ID:** SC-3**Project:** CoP San Juan 28-6 #78**Collection Date:** 5/31/2016 10:47:00 AM**Lab ID:** 1606014-003**Matrix:** SOIL**Received Date:** 6/1/2016 7:15:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>JME</b>
Diesel Range Organics (DRO)	14	9.6		mg/Kg	1	6/3/2016 4:24:01 PM	25629
Surr: DNOP	105	70-130		%Rec	1	6/3/2016 4:24:01 PM	25629
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	5.0		mg/Kg	1	6/2/2016 11:57:30 PM	25622
Surr: BFB	114	80-120		%Rec	1	6/2/2016 11:57:30 PM	25622
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	ND	0.025		mg/Kg	1	6/2/2016 11:57:30 PM	25622
Toluene	ND	0.050		mg/Kg	1	6/2/2016 11:57:30 PM	25622
Ethylbenzene	ND	0.050		mg/Kg	1	6/2/2016 11:57:30 PM	25622
Xylenes, Total	ND	0.099		mg/Kg	1	6/2/2016 11:57:30 PM	25622
Surr: 4-Bromofluorobenzene	102	80-120		%Rec	1	6/2/2016 11:57:30 PM	25622

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified



**Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Rule Engineering LLC**Client Sample ID:** SC-4**Project:** CoP San Juan 28-6 #78**Collection Date:** 5/31/2016 10:52:00 AM**Lab ID:** 1606014-004**Matrix:** SOIL**Received Date:** 6/1/2016 7:15:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>JME</b>
Diesel Range Organics (DRO)	22	9.2		mg/Kg	1	6/3/2016 4:45:58 PM	25629
Surr: DNOP	97.0	70-130		%Rec	1	6/3/2016 4:45:58 PM	25629
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	17	4.7		mg/Kg	1	6/3/2016 6:12:38 PM	25622
Surr: BFB	213	80-120	S	%Rec	1	6/3/2016 6:12:38 PM	25622
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	ND	0.024		mg/Kg	1	6/3/2016 6:12:38 PM	25622
Toluene	ND	0.047		mg/Kg	1	6/3/2016 6:12:38 PM	25622
Ethylbenzene	ND	0.047		mg/Kg	1	6/3/2016 6:12:38 PM	25622
Xylenes, Total	ND	0.095		mg/Kg	1	6/3/2016 6:12:38 PM	25622
Surr: 4-Bromofluorobenzene	110	80-120		%Rec	1	6/3/2016 6:12:38 PM	25622

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

**Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Rule Engineering LLC**Client Sample ID:** SC-5**Project:** CoP San Juan 28-6 #78**Collection Date:** 5/31/2016 11:00:00 AM**Lab ID:** 1606014-005**Matrix:** SOIL**Received Date:** 6/1/2016 7:15:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>JME</b>
Diesel Range Organics (DRO)	ND	9.8		mg/Kg	1	6/3/2016 5:08:03 PM	25629
Surr: DNOP	111	70-130		%Rec	1	6/3/2016 5:08:03 PM	25629
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	ND	4.8		mg/Kg	1	6/3/2016 6:36:03 PM	25622
Surr: BFB	116	80-120		%Rec	1	6/3/2016 6:36:03 PM	25622
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	ND	0.024		mg/Kg	1	6/3/2016 6:36:03 PM	25622
Toluene	ND	0.048		mg/Kg	1	6/3/2016 6:36:03 PM	25622
Ethylbenzene	ND	0.048		mg/Kg	1	6/3/2016 6:36:03 PM	25622
Xylenes, Total	ND	0.095		mg/Kg	1	6/3/2016 6:36:03 PM	25622
Surr: 4-Bromofluorobenzene	106	80-120		%Rec	1	6/3/2016 6:36:03 PM	25622

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified



# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1606014

07-Jun-16

Client: Rule Engineering LLC

Project: CoP San Juan 28-6 #78

Sample ID	MB-25629	SampType:	MBLK	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	PBS	Batch ID:	25629	RunNo:	34675					
Prep Date:	6/2/2016	Analysis Date:	6/3/2016	SeqNo:	1069818	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Surr: DNOP	8.9		10.00		89.3	70	130			

Sample ID	LCS-25629	SampType:	LCS	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS	Batch ID:	25629	RunNo:	34675					
Prep Date:	6/2/2016	Analysis Date:	6/3/2016	SeqNo:	1069819	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	52	10	50.00	0	104	62.6	124			
Surr: DNOP	4.3		5.000		85.2	70	130			

Sample ID	1606014-001AMS	SampType:	MS	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	SC-1	Batch ID:	25629	RunNo:	34676					
Prep Date:	6/2/2016	Analysis Date:	6/3/2016	SeqNo:	1070614	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	93	9.3	46.69	36.02	123	33.9	141			
Surr: DNOP	5.1		4.669		109	70	130			

Sample ID	1606014-001AMSD	SampType:	MSD	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	SC-1	Batch ID:	25629	RunNo:	34676					
Prep Date:	6/2/2016	Analysis Date:	6/3/2016	SeqNo:	1070615	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	92	9.8	48.78	36.02	115	33.9	141	1.67	20	
Surr: DNOP	4.9		4.878		100	70	130	0	0	

### Qualifiers:

- \* Value exceeds Maximum Contaminant Level.
- D Sample Diluted Due to Matrix
- H Holding times for preparation or analysis exceeded
- ND Not Detected at the Reporting Limit
- R RPD outside accepted recovery limits
- S % Recovery outside of range due to dilution or matrix

- B Analyte detected in the associated Method Blank
- E Value above quantitation range
- J Analyte detected below quantitation limits
- P Sample pH Not In Range
- RL Reporting Detection Limit
- W Sample container temperature is out of limit as specified

# QC SUMMARY REPORT

Hall Environmental Analysis Laboratory, Inc.

WO#: 1606014

07-Jun-16

Client: Rule Engineering LLC

Project: CoP San Juan 28-6 #78

Sample ID	MB-25622	SampType:	MBLK	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	PBS	Batch ID:	25622	RunNo:	34635					
Prep Date:	6/1/2016	Analysis Date:	6/2/2016	SeqNo:	1068922	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	1100		1000		106	80	120			

Sample ID	LCS-25622	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	LCSS	Batch ID:	25622	RunNo:	34635					
Prep Date:	6/1/2016	Analysis Date:	6/2/2016	SeqNo:	1068923	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	26	5.0	25.00	0	103	80	120			
Surr: BFB	1600		1000		161	80	120			S

## Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
R RPD outside accepted recovery limits  
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Detection Limit  
W Sample container temperature is out of limit as specified



# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1606014

07-Jun-16

Client: Rule Engineering LLC

Project: CoP San Juan 28-6 #78

Sample ID	MB-25622	SampType: MBLK		TestCode: EPA Method 8021B: Volatiles						
Client ID:	PBS	Batch ID: 25622		RunNo: 34635						
Prep Date:	6/1/2016	Analysis Date: 6/2/2016		SeqNo: 1068955		Units: mg/Kg				
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.0		1.000		105	80	120			

Sample ID	LCS-25622		SampType: LCS		TestCode: EPA Method 8021B: Volatiles					
Client ID:	LCSS		Batch ID: 25622		RunNo: 34635					
Prep Date:	6/1/2016		Analysis Date: 6/2/2016		SeqNo: 1068984		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	0.95	0.025	1.000	0	95.1	75.3	123			
Toluene	0.97	0.050	1.000	0	97.4	80	124			
Ethylbenzene	1.0	0.050	1.000	0	99.8	82.8	121			
Xylenes, Total	3.0	0.10	3.000	0	99.3	83.9	122			
Surr: 4-Bromofluorobenzene	1.1		1.000		109	80	120			

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
R RPD outside accepted recovery limits  
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Detection Limit  
W Sample container temperature is out of limit as specified



Hall Environmental Analysis Laboratory  
4901 Hawkins NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: www.hallenvironmental.com

## Sample Log-In Check List

Client Name: RULE ENGINEERING LL

Work Order Number: 1606014

RcptNo: 1

Received by/date:

Logged By: Ashley Gallegos

6/1/2016 7:15:00 AM

Completed By: Ashley Gallegos

6/1/2016 10:15:36 AM

Reviewed By:

### Chain of Custody

1. Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☒
2. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
3. How was the sample delivered? Courier

### Log In

4. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
5. Were all samples received at a temperature of  $>0^{\circ}\text{C}$  to  $6.0^{\circ}\text{C}$ ? Yes ☒ No ☐ NA ☐
6. Sample(s) in proper container(s)? Yes ☒ No ☐
7. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
8. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
9. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
10. VOA vials have zero headspace? Yes ☐ No ☐ No VOA Vials ☒
11. Were any sample containers received broken? Yes ☐ No ☒
12. Does paperwork match bottle labels?  
(Note discrepancies on chain of custody) Yes ☒ No ☐
13. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
14. Is it clear what analyses were requested? Yes ☒ No ☐
15. Were all holding times able to be met?  
(If no, notify customer for authorization.) Yes ☒ No ☐

# of preserved  
bottles checked  
for pH: \_\_\_\_\_  
( $<2$  or  $>12$  unless noted)  
Adjusted? \_\_\_\_\_  
Checked by: \_\_\_\_\_

### Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified: \_\_\_\_\_

Date: \_\_\_\_\_

By Whom: \_\_\_\_\_

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: \_\_\_\_\_

Client Instructions: \_\_\_\_\_

17. Additional remarks:

### 18. Cooler Information

Cooler No	Temp $^{\circ}\text{C}$	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.0	Good	Yes			



# Chain-of-Custody Record

Turn-Around Time:

Client: Rule Engineering, LLC

☒ Standard ☐ Rush

Billing Address: 501 Airport Dr, Suite 205

Project Name: Cop San Juan 28-6 #78

Location: Cammingston, NM 87401

Project #:

Phone #: (505) 716-2787

Project Manager:

Mail or Fax: Woodward@ruleengineering.com

Standard ☐ Level 4 (Full Validation)

Heather Woods

Accreditation

NELAP ☐ Other

EDD (Type)

Sampler: H. Woods  
On Ice: ☒ Yes ☐ No  
Sample Temperature: 10

Date Time Matrix Sample Request ID

Container Type and #

Preservative Type

HEAL No

1/16 1035 Soil SC-1

(1) 4oz Glass

Cold

10010014

BTEX + MTBE + TPH (8021)  
BTEX + MTBE + TPH (Gas only)  
TPH 8015B (GRO / DRO / ~~TPH~~)  
TPH (Method 418.1)  
EDB (Method 504.1)  
PAH's (8310 or 8270 SIMS)  
RCRA 8 Metals  
Anions (F, Cl, NO<sub>3</sub>, NO<sub>2</sub>, PO<sub>4</sub>, SO<sub>4</sub>)  
8081 Pesticides / 8082 PCB's  
8260B (VOA)  
8270 (Semi-VOA)

Air Bubbles (Y or N)

3/16 1040 Soil SC-2

1

1

-002

3/16 1047 Soil SC-3

1

1

-003

3/16 1052 Soil SC-4

1

1

-004

3/16 1100 Soil SC-5

1

1

-005

Site: Time: Relinquished by:

Received by:

Date Time

Remarks:

Relinquished by:

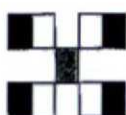
Received by:

Date Time

3/16/2015

3/16/2015

Direct Bill to ConocoPhillips



**HALL ENVIRONMENTAL  
ANALYSIS LABORATORY**

www.hallenvironmental.com

4901 Hawkins NE - Albuquerque, NM 87109

Tel. 505-345-3975 Fax 505-345-4107

Analysis Request



Hall Environmental Analysis Laboratory  
4901 Hawkins NE  
Albuquerque, NM 87109  
TEL: 505-345-3975 FAX: 505-345-4107  
Website: [www.hallenvironmental.com](http://www.hallenvironmental.com)

June 03, 2016

Heather Woods  
Rule Engineering LLC  
501 Airport Dr., Ste 205  
Farmington, NM 87401  
TEL: (505) 325-1055  
FAX

RE: COP San Juan 28-6 78

OrderNo.: 1606002

Dear Heather Woods:

Hall Environmental Analysis Laboratory received 1 sample(s) on 6/1/2016 for the analyses presented in the following report.

These were analyzed according to EPA procedures or equivalent. To access our accredited tests please go to [www.hallenvironmental.com](http://www.hallenvironmental.com) or the state specific web sites. In order to properly interpret your results it is imperative that you review this report in its entirety. See the sample checklist and/or the Chain of Custody for information regarding the sample receipt temperature and preservation. Data qualifiers or a narrative will be provided if the sample analysis or analytical quality control parameters require a flag. When necessary, data qualifiers are provided on both the sample analysis report and the QC summary report, both sections should be reviewed. All samples are reported, as received, unless otherwise indicated. Lab measurement of analytes considered field parameters that require analysis within 15 minutes of sampling such as pH and residual chlorine are qualified as being analyzed outside of the recommended holding time.

Please don't hesitate to contact HEAL for any additional information or clarifications.

ADHS Cert #AZ0682 -- NMED-DWB Cert #NM9425 -- NMED-Micro Cert #NM0190

Sincerely,

A handwritten signature in black ink, appearing to read "Andy Freeman", is written over a horizontal line.

Andy Freeman  
Laboratory Manager  
4901 Hawkins NE  
Albuquerque, NM 87109



**Hall Environmental Analysis Laboratory, Inc.****CLIENT:** Rule Engineering LLC**Client Sample ID:** SC-6**Project:** COP San Juan 28-6 78**Collection Date:** 5/31/2016 10:30:00 AM**Lab ID:** 1606002-001**Matrix:** SOIL**Received Date:** 6/1/2016 7:15:00 AM

Analyses	Result	PQL	Qual	Units	DF	Date Analyzed	Batch
<b>EPA METHOD 8015M/D: DIESEL RANGE ORGANICS</b>							Analyst: <b>KJH</b>
Diesel Range Organics (DRO)	170	9.4		mg/Kg	1	6/1/2016 9:55:23 AM	25598
Surr: DNOP	75.6	70-130		%Rec	1	6/1/2016 9:55:23 AM	25598
<b>EPA METHOD 8015D: GASOLINE RANGE</b>							Analyst: <b>NSB</b>
Gasoline Range Organics (GRO)	46	3.7		mg/Kg	1	6/1/2016 10:47:40 AM	25568
Surr: BFB	544	80-120	S	%Rec	1	6/1/2016 10:47:40 AM	25568
<b>EPA METHOD 8021B: VOLATILES</b>							Analyst: <b>NSB</b>
Benzene	ND	0.018		mg/Kg	1	6/1/2016 10:47:40 AM	25568
Toluene	ND	0.037		mg/Kg	1	6/1/2016 10:47:40 AM	25568
Ethylbenzene	ND	0.037		mg/Kg	1	6/1/2016 10:47:40 AM	25568
Xylenes, Total	0.18	0.074		mg/Kg	1	6/1/2016 10:47:40 AM	25568
Surr: 4-Bromofluorobenzene	129	80-120	S	%Rec	1	6/1/2016 10:47:40 AM	25568

Refer to the QC Summary report and sample login checklist for flagged QC data and preservation information.

<b>Qualifiers:</b>	*	Value exceeds Maximum Contaminant Level.	B	Analyte detected in the associated Method Blank
	D	Sample Diluted Due to Matrix	E	Value above quantitation range
	H	Holding times for preparation or analysis exceeded	J	Analyte detected below quantitation limits
	ND	Not Detected at the Reporting Limit	P	Sample pH Not In Range
	R	RPD outside accepted recovery limits	RL	Reporting Detection Limit
	S	% Recovery outside of range due to dilution or matrix	W	Sample container temperature is out of limit as specified

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1606002

03-Jun-16

Client: Rule Engineering LLC

Project: COP San Juan 28-6 78

Sample ID	MB-25598	SampType:	MBLK	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	PBS	Batch ID:	25598	RunNo:	34589					
Prep Date:	6/1/2016	Analysis Date:	6/1/2016	SeqNo:	1066725	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	ND	10								
Surr: DNOP	7.6		10.00		75.8	70	130			

Sample ID	LCS-25598	SampType:	LCS	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS	Batch ID:	25598	RunNo:	34589					
Prep Date:	6/1/2016	Analysis Date:	6/1/2016	SeqNo:	1066858	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Diesel Range Organics (DRO)	49	10	50.00	0	98.7	62.6	124			
Surr: DNOP	3.7		5.000		73.2	70	130			

Sample ID	LCS-25570	SampType:	LCS	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	LCSS	Batch ID:	25570	RunNo:	34590					
Prep Date:	5/31/2016	Analysis Date:	6/1/2016	SeqNo:	1068093	Units:	%Rec			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	4.3		5.000		85.6	70	130			

Sample ID	MB-25570	SampType:	MBLK	TestCode:	EPA Method 8015M/D: Diesel Range Organics					
Client ID:	PBS	Batch ID:	25570	RunNo:	34590					
Prep Date:	5/31/2016	Analysis Date:	6/1/2016	SeqNo:	1068094	Units:	%Rec			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: DNOP	8.3		10.00		83.3	70	130			

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
R RPD outside accepted recovery limits  
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Detection Limit  
W Sample container temperature is out of limit as specified



# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1606002

03-Jun-16

Client: Rule Engineering LLC

Project: COP San Juan 28-6 78

Sample ID	MB-25568	SampType:	MBLK	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	PBS	Batch ID:	25568	RunNo:	34598					
Prep Date:	5/31/2016	Analysis Date:	6/1/2016	SeqNo:	1067457	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	ND	5.0								
Surr: BFB	1100		1000		112	80	120			

Sample ID	LCS-25568	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	LCSS	Batch ID:	25568	RunNo:	34598					
Prep Date:	5/31/2016	Analysis Date:	6/1/2016	SeqNo:	1067458	Units:	mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Gasoline Range Organics (GRO)	23	5.0	25.00	0	91.1	80	120			
Surr: BFB	1200		1000		125	80	120			S

Sample ID	MB-25547	SampType:	MBLK	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	PBS	Batch ID:	25547	RunNo:	34598					
Prep Date:	5/27/2016	Analysis Date:	6/1/2016	SeqNo:	1067478	Units:	%Rec			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	1200		1000		118	80	120			

Sample ID	LCS-25547	SampType:	LCS	TestCode:	EPA Method 8015D: Gasoline Range					
Client ID:	LCSS	Batch ID:	25547	RunNo:	34598					
Prep Date:	5/27/2016	Analysis Date:	6/1/2016	SeqNo:	1067479	Units:	%Rec			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Surr: BFB	1300		1000		127	80	120			S

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
R RPD outside accepted recovery limits  
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Detection Limit  
W Sample container temperature is out of limit as specified

# QC SUMMARY REPORT

## Hall Environmental Analysis Laboratory, Inc.

WO#: 1606002

03-Jun-16

Client: Rule Engineering LLC

Project: COP San Juan 28-6 78

Sample ID	MB-25568		SampType: MBLK		TestCode: EPA Method 8021B: Volatiles					
Client ID:	PBS		Batch ID: 25568		RunNo: 34598					
Prep Date:	5/31/2016		Analysis Date: 6/1/2016		SeqNo: 1067503		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	ND	0.025								
Toluene	ND	0.050								
Ethylbenzene	ND	0.050								
Xylenes, Total	ND	0.10								
Surr: 4-Bromofluorobenzene	1.2		1.000		116	80	120			

Sample ID	LCS-25568		SampType: LCS		TestCode: EPA Method 8021B: Volatiles					
Client ID:	LCSS		Batch ID: 25568		RunNo: 34598					
Prep Date:	5/31/2016		Analysis Date: 6/1/2016		SeqNo: 1067504		Units: mg/Kg			
Analyte	Result	PQL	SPK value	SPK Ref Val	%REC	LowLimit	HighLimit	%RPD	RPDLimit	Qual
Benzene	1.0	0.025	1.000	0	103	75.3	123			
Toluene	1.0	0.050	1.000	0	101	80	124			
Ethylbenzene	0.99	0.050	1.000	0	98.9	82.8	121			
Xylenes, Total	3.0	0.10	3.000	0	99.3	83.9	122			
Surr: 4-Bromofluorobenzene	1.2		1.000		124	80	120			S

### Qualifiers:

\* Value exceeds Maximum Contaminant Level.  
D Sample Diluted Due to Matrix  
H Holding times for preparation or analysis exceeded  
ND Not Detected at the Reporting Limit  
R RPD outside accepted recovery limits  
S % Recovery outside of range due to dilution or matrix

B Analyte detected in the associated Method Blank  
E Value above quantitation range  
J Analyte detected below quantitation limits  
P Sample pH Not In Range  
RL Reporting Detection Limit  
W Sample container temperature is out of limit as specified



# Sample Log-In Check List

Client Name: RULE ENGINEERING LL

Work Order Number: 1606002

RcptNo: 1

Received by/date: \_\_\_\_\_

Logged By: Anne Thorne

6/1/2016 7:15:00 AM

*Anne Thorne*

Completed By: Anne Thorne

6/1/2016

*Anne Thorne*

Reviewed By: *JB*

6/1/16

## Chain of Custody

1. Custody seals intact on sample bottles? Yes ☐ No ☐ Not Present ☒
2. Is Chain of Custody complete? Yes ☒ No ☐ Not Present ☐
3. How was the sample delivered? Courier

## Log In

4. Was an attempt made to cool the samples? Yes ☒ No ☐ NA ☐
5. Were all samples received at a temperature of >0° C to 6.0°C Yes ☒ No ☐ NA ☐
6. Sample(s) in proper container(s)? Yes ☒ No ☐
7. Sufficient sample volume for indicated test(s)? Yes ☒ No ☐
8. Are samples (except VOA and ONG) properly preserved? Yes ☒ No ☐
9. Was preservative added to bottles? Yes ☐ No ☒ NA ☐
10. VOA vials have zero headspace? Yes ☐ No ☐ No VOA Vials ☒
11. Were any sample containers received broken? Yes ☐ No ☒
12. Does paperwork match bottle labels?  
(Note discrepancies on chain of custody) Yes ☒ No ☐
13. Are matrices correctly identified on Chain of Custody? Yes ☒ No ☐
14. Is it clear what analyses were requested? Yes ☒ No ☐
15. Were all holding times able to be met?  
(If no, notify customer for authorization.) Yes ☒ No ☐

# of preserved  
bottles checked  
for pH: \_\_\_\_\_  
(<2 or >12 unless noted)  
Adjusted? \_\_\_\_\_  
Checked by: \_\_\_\_\_

## Special Handling (if applicable)

16. Was client notified of all discrepancies with this order? Yes ☐ No ☐ NA ☒

Person Notified: \_\_\_\_\_

Date: \_\_\_\_\_

By Whom: \_\_\_\_\_

Via: ☐ eMail ☐ Phone ☐ Fax ☐ In Person

Regarding: \_\_\_\_\_

Client Instructions: \_\_\_\_\_

17. Additional remarks:

## 18. Cooler Information

Cooler No	Temp °C	Condition	Seal Intact	Seal No	Seal Date	Signed By
1	1.0	Good	Yes			

# Chain-of-Custody Record

Turn-Around Time:

Client: Rush Engineering, LLC

☐ Standard ☒ Rush Same Day



**HALL ENVIRONMENTAL  
ANALYSIS LABORATORY**

www.hallenvironmental.com

mailing Address: 501 Airport Dr, Suite 205

City: San Juan 28-6 #78

4901 Hawkins NE - Albuquerque, NM 87109

Phone #: (505) 716-2787

Tel. 505-345-3975 Fax 505-345-4107

mail or Fax#: hwe@seculineengineering.com

Project Manager:

AOC Package: ☒ Standard ☐ Level 4 (Full Validation)

H. Woods

Accreditation

NELAP ☐ Other

EDD (Type)

Sampler: H. Woods  
Office: ☒ Yes ☐ No  
Sample Temperature: 10

Date Time Matrix Sample Request ID

Container Type and #

Preservative Type

HEAL No.

3/16 1030 Soil SC-1c

1040000114

None

201

X BTEX + MTBE + TPH (8021)  
BTEX + MTBE + TPH (Gas only)  
X TPH 8015B (GRO / DRO / ~~MTBE~~)  
TPH (Method 418.1)  
EDB (Method 504.1)  
PAH's (8310 or 8270 SIMS)  
RCRA 8 Metals  
Anions (F, Cl, NO<sub>3</sub>, NO<sub>2</sub>, PO<sub>4</sub>, SO<sub>4</sub>)  
8081 Pesticides / 8082 PCB's  
8260B (VOA)  
8270 (Semi-VOA)

Air Bubbles (Y or N)

Relinquished by:

Received by:

Date Time

Remarks:

3/16 1640 Heather M. Woods

3/31/16 1640

5/31/16 1640

Direct Bill to ConocoPhillips

3/16 2015 Michael Wells

3/31/16 1640

5/31/16 1640